

## Supplementary data

### **Association between triglyceride-to-high-density lipoprotein cholesterol ratio and prediabetes: a cross-sectional study in Chinese non-obese people with a normal range of low-density lipoprotein cholesterol**

**Running title: The relationship between TG/HDL-C ratio and Pre-DM**

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**Total number of tables: 4**

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**Table S1. The results of univariate analysis**

<b>Variable</b>	<b>Statistics</b>	<b>OR (95%CI)</b>	<b>P value</b>
<b>Age, years</b>	39.591 ± 13.689	1.062 (1.061, 1.064)	<0.001
<b>Gender</b>			
<b>Female</b>	85861 (56.059%)	Ref.	
<b>Male</b>	67302 (43.941%)	2.254 (2.177, 2.334)	<0.001
<b>BMI, kg/m<sup>2</sup></b>	21.074 ± 2.069	1.267 (1.256, 1.279)	<0.001
<b>GGT,U/L</b>	25.317 ± 23.627	1.009 (1.009, 1.010)	<0.001
<b>ALT,U/L</b>	18.804 ± 17.308	1.003 (1.003, 1.004)	<0.001
<b>AST,U/L</b>	22.241 ± 11.084	1.008 (1.007, 1.010)	<0.001
<b>ALB,g/L</b>	44.522 ± 3.019	0.988 (0.983, 0.994)	<0.001
<b>GLB,g/L</b>	29.297 ± 3.785	1.032 (1.027, 1.036)	<0.001
<b>TB, umol/L</b>	12.086 ± 5.061	1.008 (1.005, 1.011)	<0.001
<b>DBIL, umol/L</b>	2.008 ± 1.041	0.968 (0.952, 0.984)	<0.001
<b>BUN,mmol/L</b>	4.344 ± 1.269	1.317 (1.301, 1.333)	<0.001
<b>Scr, umol/L</b>	77.374 ± 21.885	1.016 (1.015, 1.017)	<0.001
<b>UA, umol/L</b>	271.415 ± 83.919	1.003 (1.003, 1.003)	<0.001
<b>TC, mmol/L</b>	4.484 ± 0.719	1.428 (1.395, 1.462)	<0.001
<b>TG, mmol/L</b>	1.121 ± 0.538	1.873 (1.825, 1.923)	<0.001
<b>HDL-C, mmol/L</b>	1.490 ± 0.348	0.708 (0.673, 0.745)	<0.001
<b>LDL-C, mmol/L</b>	2.222 ± 0.470	1.781 (1.715, 1.848)	<0.001
<b>TG/HDL-C</b>	0.824 ± 0.518	1.792 (1.744, 1.842)	<0.001

Values are n(%) or mean±SD

ALB, albumin; ALT, alanine aminotransferase; AST, aspartate aminotransferase; BMI, body mass index; BUN, blood urea nitrogen; Scr, serum creatinine; DBIL, direct bilirubin; TB, total bilirubin; GGT,  $\gamma$ -glutamyl transpeptidase; GLB, globulin; HDL-C, high-density lipoprotein cholesterol; LDL-C, low-density lipoprotein cholesterol; TC, total cholesterol; TG, triglyceride; UA, uric acid; TG/HDL-C: triglyceride-to-high-density lipoprotein cholesterol ratio

**Table S2. Relationship between TG/HDL-C ratio and Pre-DM in participants without excluding outliers of TG/HDL-C ratio**

Variable	Crude model (OR,95%CI, P)	Model I(OR,95%CI, P)	Model II (OR,95%CI, P)
<b>TG/HDL-C</b>	1.710 (1.688, 1.732) <0.001	1.569 (1.546, 1.592) <0.001	1.334 (1.312, 1.356) <0.001
<b>TG/HDL-C</b>			
<b>(Quintile)</b>			
<b>Q1</b>	1.0	1.0	1.0
<b>Q2</b>	1.616 (1.526, 1.710) <0.001	1.384 (1.302, 1.471) <0.001	1.275 (1.196, 1.359) <0.001
<b>Q3</b>	2.381 (2.256, 2.512) <0.001	1.849 (1.745, 1.960) <0.001	1.592 (1.498, 1.693) <0.001
<b>Q4</b>	3.387 (3.216, 3.568) <0.001	2.492 (2.356, 2.637) <0.001	1.933 (1.821, 2.052) <0.001
<b>Q5</b>	5.615 (5.341, 5.903) <0.001	3.947 (3.737, 4.169) <0.001	2.548 (2.402, 2.702) <0.001
<b>P for trend</b>	<0.001	<0.001	<0.001

Crude model: we did not adjust other covariants

Model I: we adjusted age, sex, BMI

Model II: we adjusted age, sex, BMI, ALT, AST, GGT, ALB, GLB, DBIL, BUN, Scr, UA, TC, LDL-C, TB

OR, odds ratios; CI: confidence, Ref: reference; TG/HDL-C: triglyceride-to-high-density lipoprotein cholesterol ratio

**Table S3. The characteristics of participants between NG and Pre-DM groups.**

	<b>NG</b>	<b>Pre-DM</b>	<b>P-value</b>
<b>N</b>	138193	14970	
<b>Age(years)</b>	38.2 ± 12.7	52.3 ± 15.9	<0.001
<b>Gender</b>			<0.001
<b>Female</b>	80172 (58.0%)	5689 (38.0%)	
<b>Male</b>	58021 (42.0%)	9281 (62.0%)	
<b>BMI(kg/m<sup>2</sup>)</b>	21.0 ± 2.1	21.9 ± 1.9	<0.001
<b>GGT(U/L)</b>	19.0 (14.0-28.4)	23.0 (17.0-35.0)	<0.001
<b>ALT(U/L)</b>	15.0 (11.0-22.5)	17.0 (13.0-23.0)	<0.001
<b>AST(U/L)</b>	20.0 (17.0-25.0)	22.0 (19.0-26.0)	<0.001
<b>ALB(g/L)</b>	44.5 ± 3.0	44.4 ± 3.0	<0.001
<b>GLB(g/L)</b>	29.3 ± 3.8	29.7 ± 4.0	<0.001
<b>TB(umol/L)</b>	12.1 ± 5.1	12.3 ± 5.0	<0.001
<b>DBIL(umol/L)</b>	1.9 (1.3-2.6)	1.8 (1.3-2.5)	0.0004
<b>BUN(mmol/L)</b>	4.3 ± 1.2	4.8 ± 1.5	<0.001
<b>Scr(umol/L)</b>	76.6 ± 20.2	84.8 ± 33.0	<0.001
<b>SUA(umol/L)</b>	269.3 ± 83.4	291.4 ± 86.5	<0.001
<b>FPG(mmol/L)</b>	4.9 ± 0.3	6.0 ± 0.3	<0.001
<b>TC(mmol/L)</b>	4.5 ± 0.7	4.7 ± 0.7	<0.001
<b>TG(mmol/L)</b>	1.1 ± 0.5	1.3 ± 0.6	<0.001
<b>HDL-C(mmol/L)</b>	1.5 ± 0.3	1.5 ± 0.4	<0.001
<b>LDL-C(mmol/L)</b>	2.2 ± 0.5	2.3 ± 0.5	<0.001
<b>TG/HDL-C</b>	0.7 (0.5-1.0)	0.8 (0.6-1.3)	<0.001

Values are n (%) or mean ± SD or median (quartile)

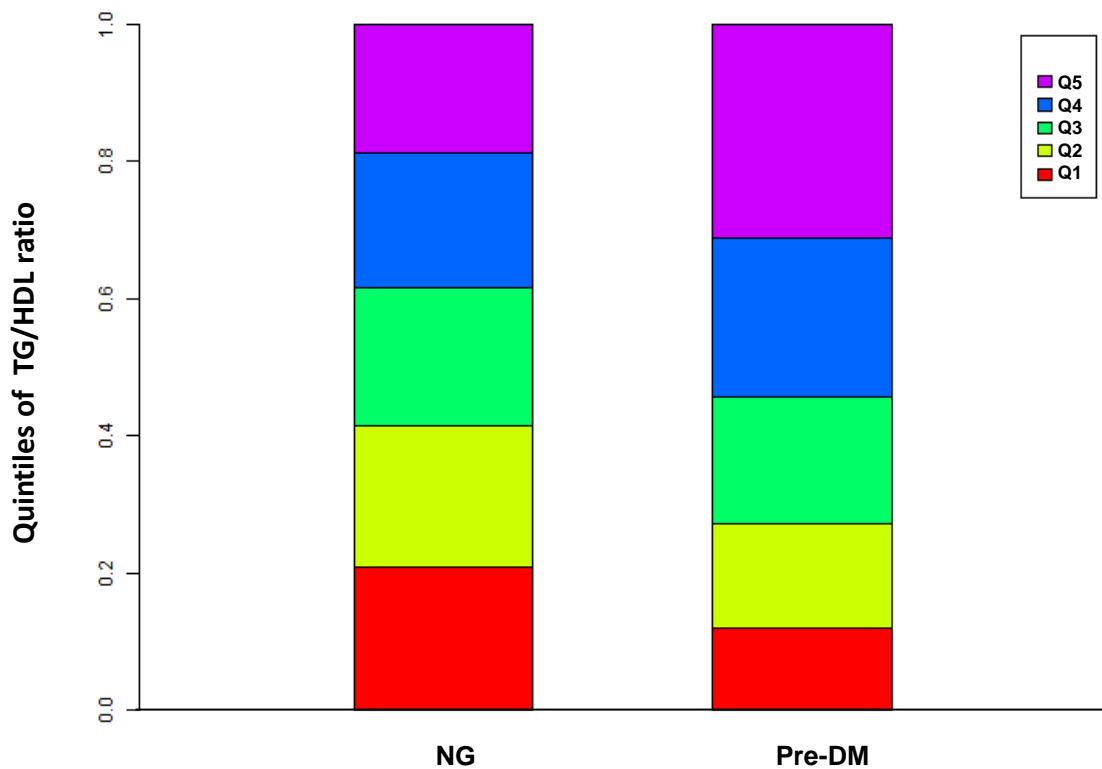
ALB, albumin; ALT, alanine aminotransferase; AST, aspartate aminotransferase; BMI, body mass index; BUN, blood urea nitrogen; Scr, serum creatinine; DBIL, direct bilirubin; TB, total bilirubin; FPG, fasting plasma glucose; GGT,  $\gamma$ -glutamyl transpeptidase; GLB, globulin; HDL-C, high-density lipoprotein cholesterol; LDL-C, low-density lipoprotein cholesterol; TC, total cholesterol; TG, triglyceride; UA, uric acid; TG/HDL-C: triglyceride-to-high-density lipoprotein cholesterol ratio

**Table S4. The characteristics of participants on both sides of the inflection point.**

<b>TG/HDL-C ratio</b>	<b>&lt;1.617</b>	<b>&gt;=1.617</b>	<b>P-value</b>
<b>N</b>	140439	12724	
<b>Age(years)</b>	39.2 ± 13.6	44.0 ± 14.0	<0.001
<b>Gender</b>			<0.001
<b>Female</b>	82902 (59.0%)	2959 (23.3%)	
<b>Male</b>	57537 (41.0%)	9765 (76.7%)	
<b>BMI(kg/m<sup>2</sup>)</b>	21.0 ± 2.1	22.4 ± 1.7	<0.001
<b>GGT(U/L)</b>	19.0 (14.0-28.0)	28.0 (20.0-42.0)	<0.001
<b>ALT(U/L)</b>	15.0 (11.0-22.0)	20.0 (14.0-28.0)	<0.001
<b>AST(U/L)</b>	20.0 (17.0-25.0)	22.0 (19.0-26.0)	<0.001
<b>ALB(g/L)</b>	44.5 ± 3.0	44.9 ± 2.9	<0.001
<b>GLB(g/L)</b>	29.3 ± 3.8	29.4 ± 3.8	0.017
<b>TB(umol/L)</b>	12.1 ± 5.1	12.1 ± 5.1	<0.001
<b>DBIL(umol/L)</b>	1.9 (1.3-2.6)	1.7 (1.2-2.4)	<0.001
<b>BUN(mmol/L)</b>	4.3 ± 1.3	4.5 ± 1.4	<0.001
<b>Scr(umol/L)</b>	76.6 ± 20.7	86.4 ± 30.5	<0.001
<b>UA(umol/L)</b>	265.6 ± 81.3	335.5 ± 86.1	<0.001
<b>FPG(mmol/L)</b>	5.0 ± 0.5	5.2 ± 0.5	0.190
<b>TC(mmol/L)</b>	4.5 ± 0.7	4.7 ± 0.7	<0.001
<b>TG(mmol/L)</b>	0.9 (0.7-1.2)	2.2 (1.9-2.6)	<0.001
<b>HDL-C(mmol/L)</b>	1.5 ± 0.3	1.1 ± 0.2	<0.001
<b>LDL-C(mmol/L)</b>	2.2 ± 0.5	2.4 ± 0.4	<0.001
<b>TG/HDL-C</b>	0.6 (0.5-0.9)	2.0 (1.8-2.4)	<0.001

Values are n (%) or mean ± SD or median (quartile)

ALB, albumin; ALT, alanine aminotransferase; AST, aspartate aminotransferase; BMI, body mass index; BUN, blood urea nitrogen; Scr, serum creatinine; DBIL, direct bilirubin; TB, total bilirubin; FPG, fasting plasma glucose; GGT,  $\gamma$ -glutamyl transpeptidase; GLB, globulin; HDL-C, high-density lipoprotein cholesterol; LDL-C, low-density lipoprotein cholesterol; TC, total cholesterol; TG, triglyceride; UA, uric acid; TG/HDL-C: triglyceride-to-high-density lipoprotein cholesterol ratio



**Figure S1. The TG/HDL-C ratio levels of all participants from the Pre-DM and NG groups**

The distribution level of the TG/HDL-C ratio in the Pre-DM group was higher than the NG groups